

# **SURFACE TENSION**

## **The Art of Science**



**PRESENTED BY**

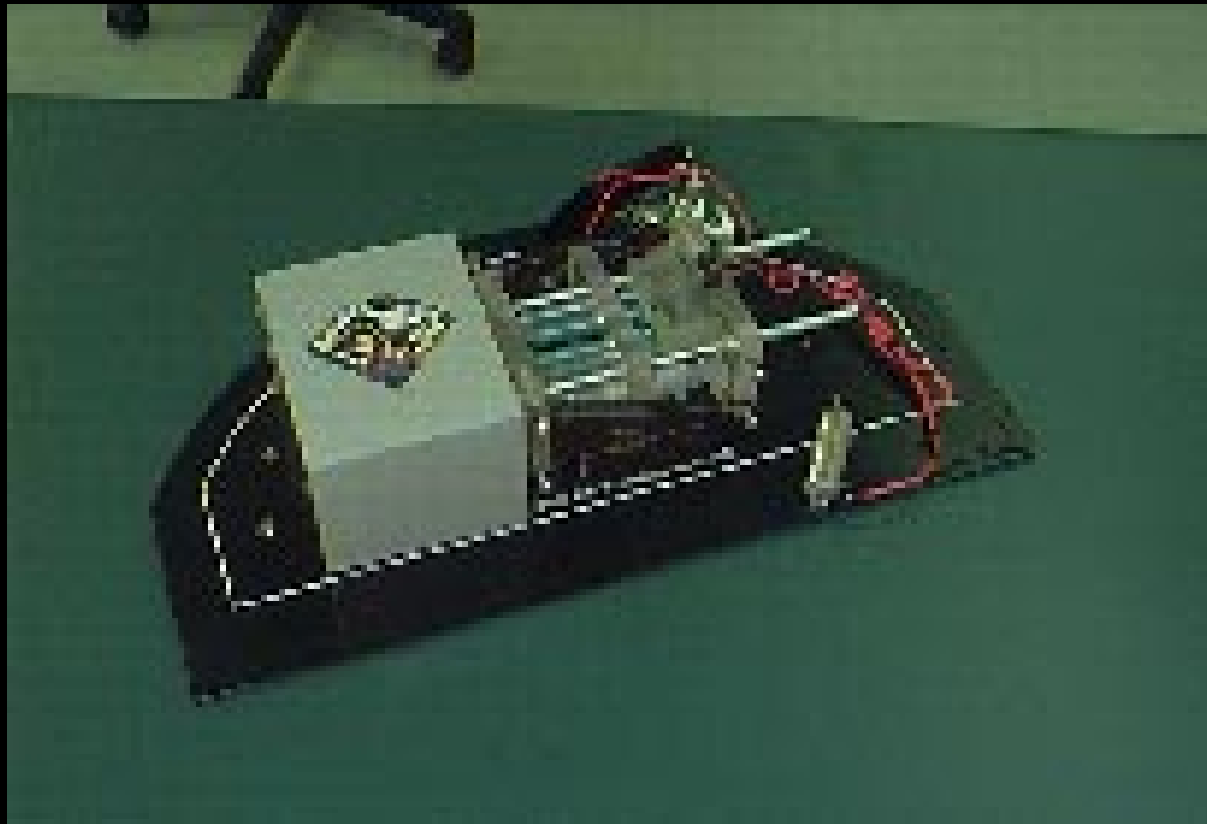
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**SPONSORED BY**

**Lynne Zielinski**

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Northbrook, Illinois**

# SURFACE TENSION



# PURPOSE

- **Study in microgravity environment:**
  - Fluid dynamics
  - Interaction of paints and dyes
  - Cohesive and adhesive properties
- **Create:**
  - Computer simulation
  - Space Art

# **HYPOTHESES**

- **Circular markings at low velocity**
- **Immiscible fluids will swirl; not mix**
- **Miscible fluids will retain surface tension dominance**

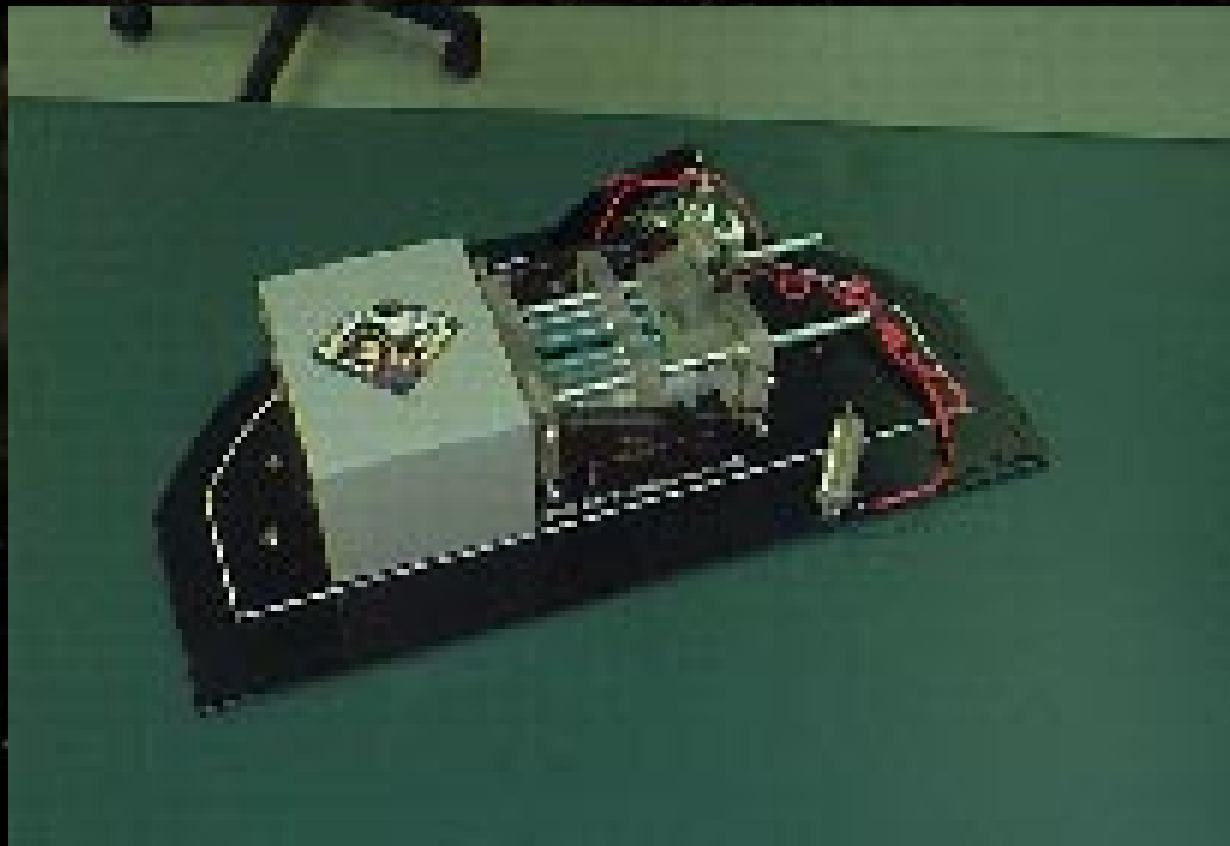
# THE SCIENCE

- Surface Tension
- Viscosity
- Cohesion
- Adhesion

# INTERDISCIPLINARY

- High School
  - Art Students
  - Broadcasting
  - Journalism
  - Industrial Ed
- Elementary Schools

# SETUP AND PROCEDURE



# FLIGHTS

## STS-80

- Plastic gears malfunctioned
- Replaced with metal gears

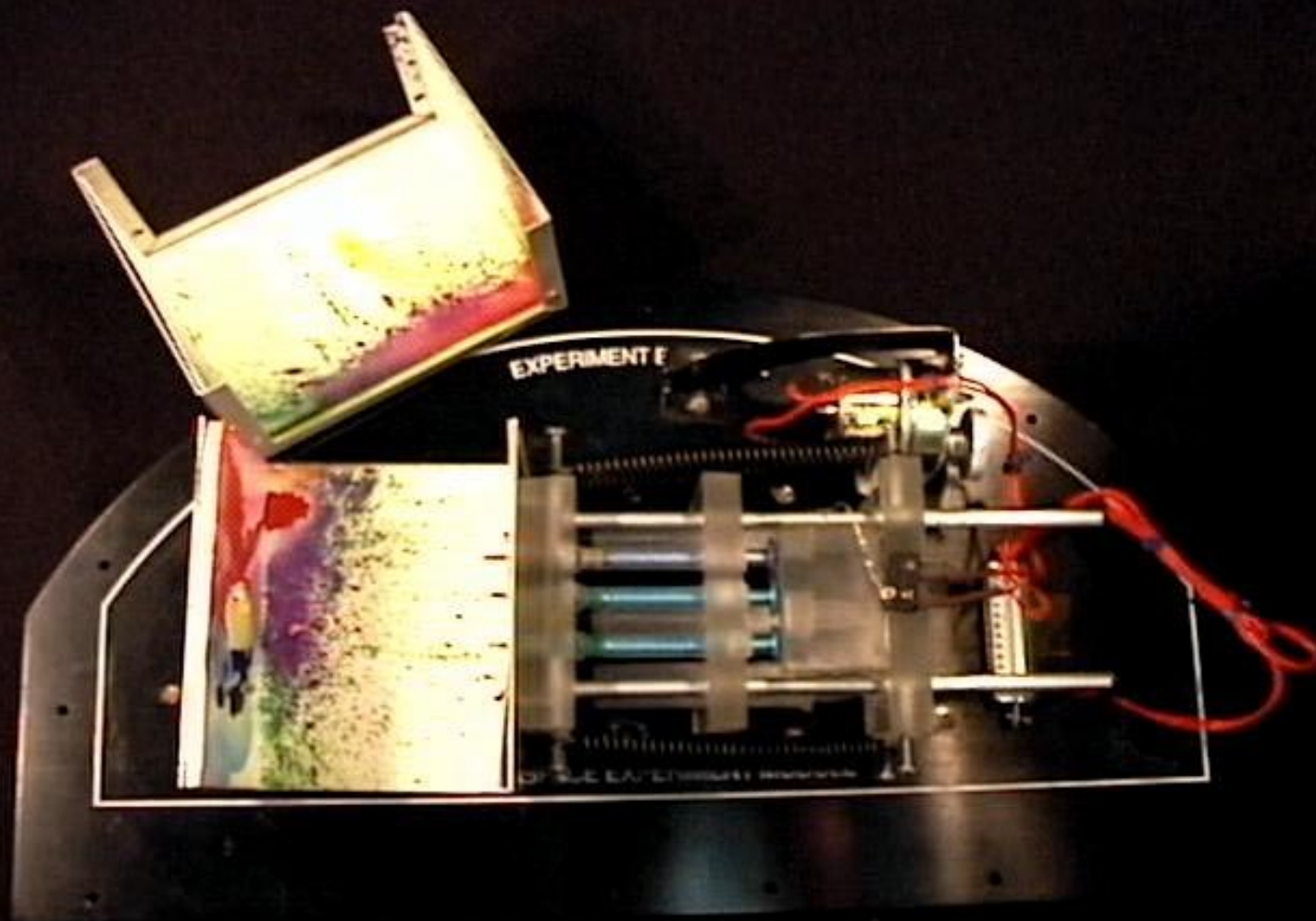
## STS-85

- Motor mount bent due to prolonged stress
- Steel support added

## STS-95

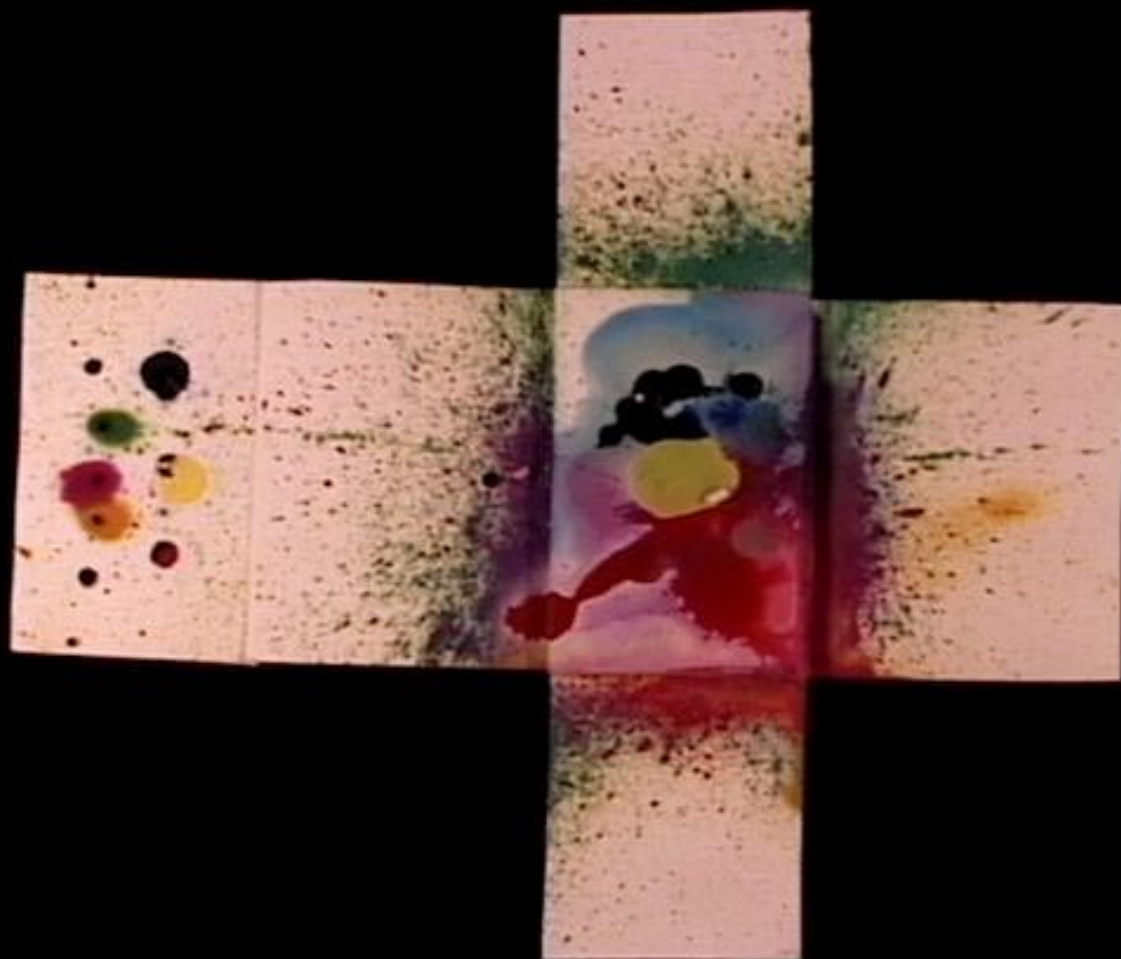
- A successful flight





# COMPARATIVE ANALYSIS





FLIGHT #1

GROUND  
TEST #1

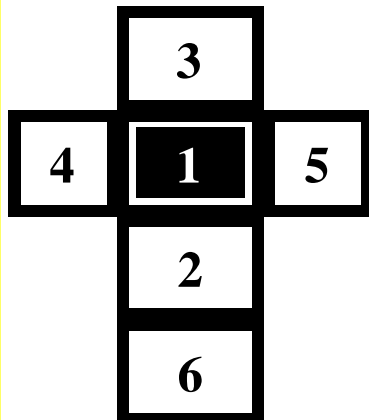
BACK  
WALL



FLIGHT #3

GROUND  
TEST #2

BACK  
WALL

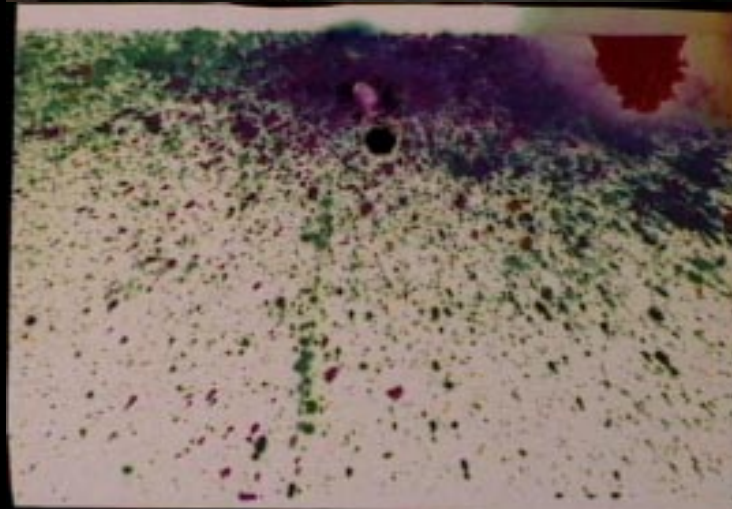




BOTTOM  
WALL

FLIGHT #1

GROUND  
TEST #1



FLIGHT #3

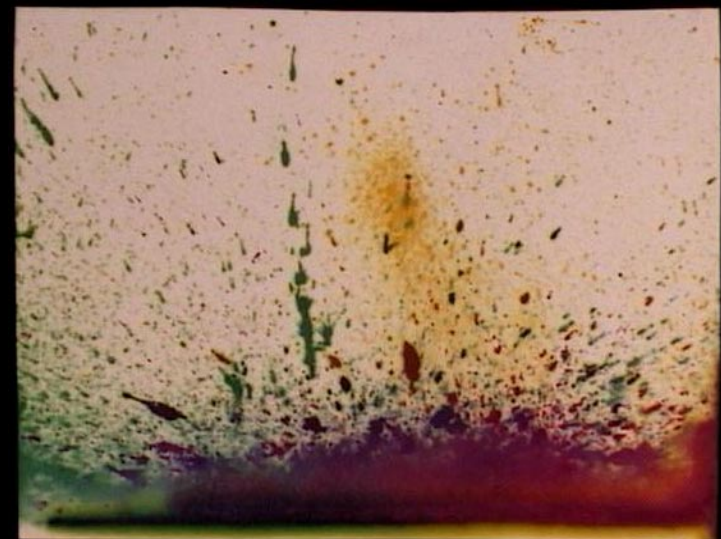
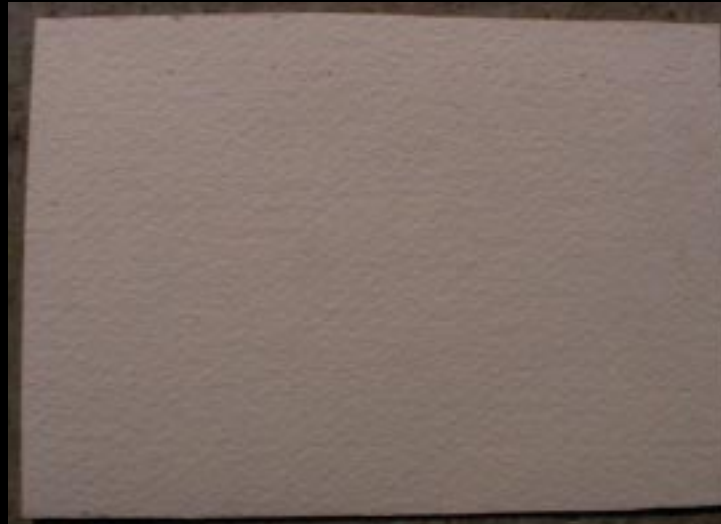
GROUND  
TEST #2

	3	
4	1	5
	2	
	6	

FLIGHT #1

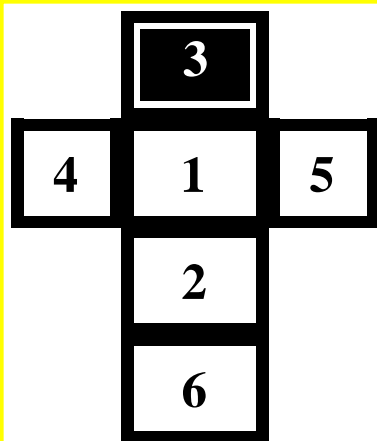
GROUND  
TEST #1

TOP  
WALL



FLIGHT #3

GROUND  
TEST #2

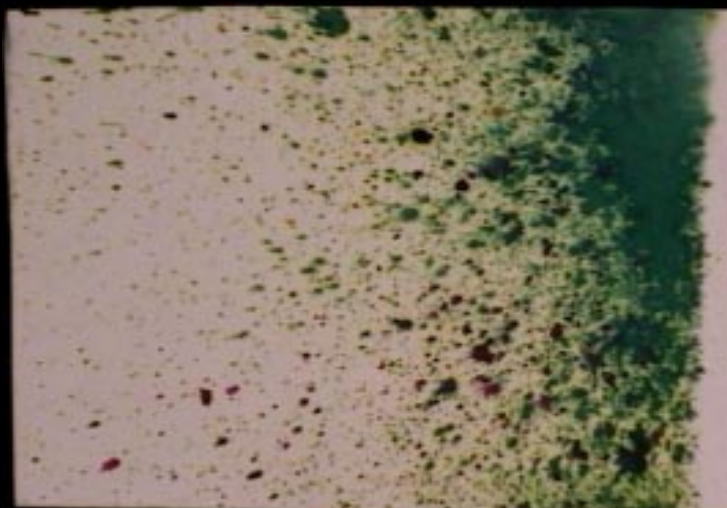




L. SIDE  
WALL

FLIGHT #1

GROUND  
TEST #1



FLIGHT #3

GROUND  
TEST #2

	3	
4	1	5
	2	
	6	

FLIGHT #1

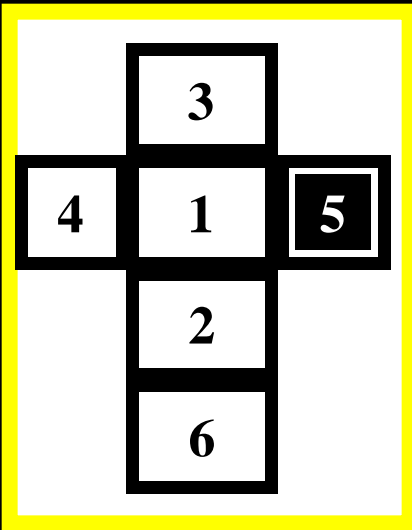
GROUND  
TEST #1

R. SIDE  
WALL



FLIGHT #3

GROUND  
TEST #2

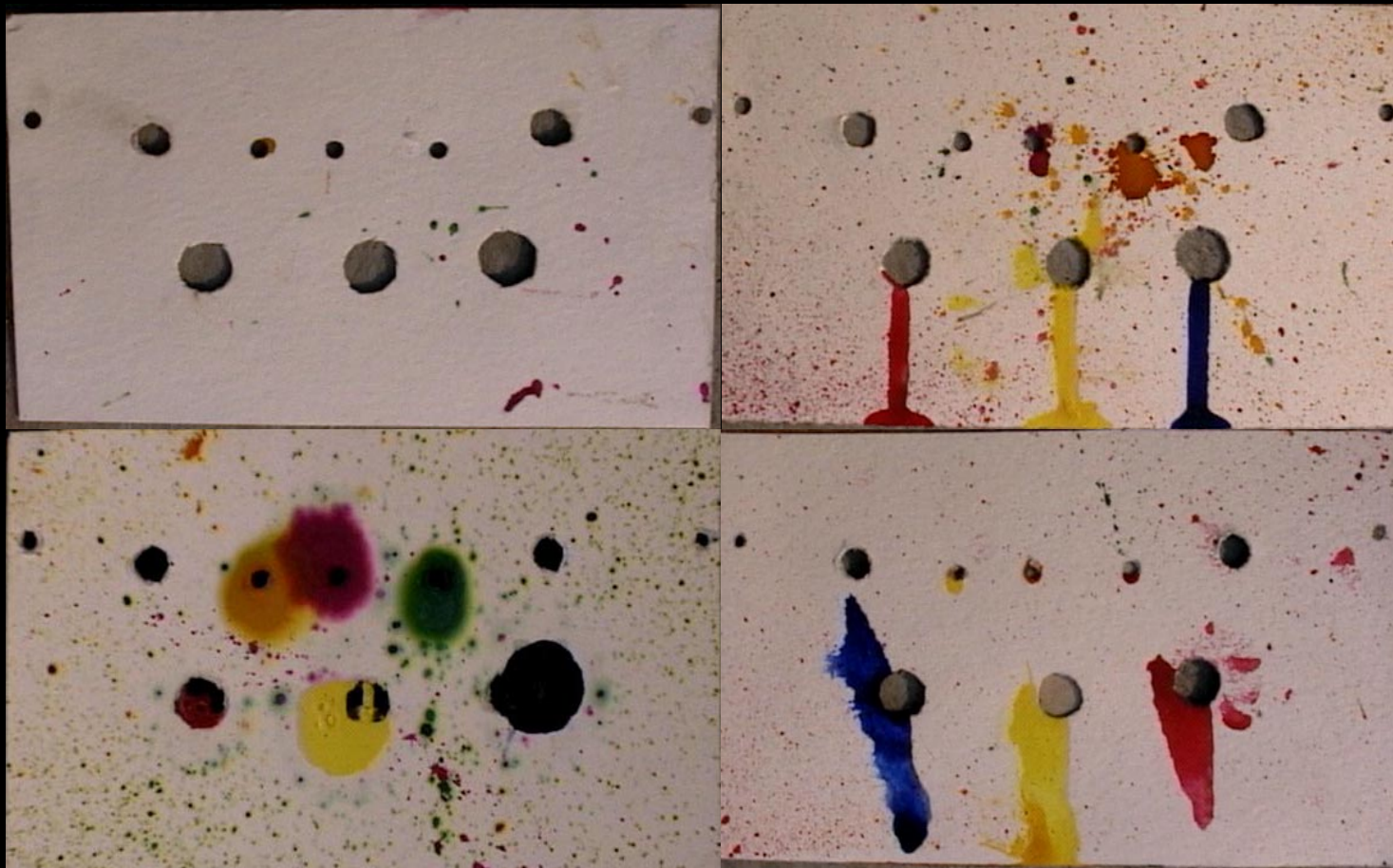




FRONT  
WALL

FLIGHT #1

GROUND  
TEST #1



FLIGHT #3

GROUND  
TEST #2





# QUESTIONS RAISED





# Kandinsky & ST



# THANK YOU

